

AN INVESTIGATION INTO THE TREATMENT OF  
THE SEBORRHOEIC GROUP OF SKIN DISEASES, SYCOSIS  
BARBAE AND FURUNCULOSIS  
WITH PENICILLIN.

by

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When available, it is available in large  
quantities and the study of its composition is  
very important in the study of the  
body.

## P A R T      O N E

Chapter 1	...	...	...	...	Introduction.
Chapter 2	...	....	...	...	Methods of Study.
Chapter 3	...	...	...	...	Administration of Therapy and Toxic Reactions.
Chapter 4	...	...	...	...	Clinical Scope.

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The study of these three subjects is  
very important in the study of the  
body. In the study of the body, it is  
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## CHAPTER ONE.

### INTRODUCTION.

When Penicillin became available in ample quantities for the treatment of skin complaints in the army, during the latter part of the war and occupation, it was decided to investigate its effect on three very common and troublesome skin conditions, namely the Seborrhoeic Group of skin diseases, Sycosis Barbae and Furunculosis, even although it was impossible under active service conditions to obtain a well controlled series of cases.

Both of these conditions were very common in the army, and accounted for loss of many man hours and interference with training, e.g. Bolham (1945) (1) "Seborrhoeic Dermatitis in one or other form is probably the most common of all skin diseases seen in out-patient departments of Military Hospitals to-day."

The treatment of these three conditions has always been very unsatisfactory and disappointing, so that if it were found that penicillin would heal quickly and prevent relapse, another great advance could be recorded.

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## CHAPTER TWO.

### METHODS OF STUDY.

The patients were all British soldiers who took part in the campaign in Italy and the occupation of Austria during 1945 and early 1946. The work was done in Naples and Milan in Italy, and Graz and Vienna in Austria. The average age of the patients was 25 years. All the cases were "in" patients. No "out" patients were included in this series.

Not all the cases of Furunculosis and Seborrhoeic Dermatitis admitted to hospital were treated with Penicillin. Many cases of recent, acute boils were treated only with local therapy (with or without one of the sulphonamide group of drugs internally). Most cases, however, of chronic recurrent boils were treated with Penicillin, in the hope that after the present crop was healed, further relapse would be prevented.

The series is not strictly controlled, e.g. one patient may have several boils on one forearm of short duration, whereas the next patient may have had occasional boils over a period of two years. Similarly, with the Seborrhoeic group, some of the cases had three times as much skin surface affected as others. Because of/

of this, in every case, the method of evaluating treatment was a clinical one. At the end of treatment, whether the case had cleared up or otherwise, it was reviewed and placed under one of several headings, indicating response to treatment. These were:-

- (1) Rapid Healing.
- (2) Steady Healing.
- (3) Slow Healing.
- (4) Improved, but relapsed.
- (5) Improvement slight.
- (6) Condition unchanged.
- (7) Condition worse.

An example of an actual case placed in each of these groups is summarised below.

(1) Gnr. P. R.A.

Admitted to hospital with a developing carbuncle on L-thigh and scattered large boils on forearm.

500,000 units of Penicillin given and local treatment.

Result: Immediate improvement followed, no further boils/

boils appeared, the carbuncle and many boils abated completely. Nine days in hospital.

("Rapid Healing")

(2) W/O O. R. Sigs.

Admitted to hospital with a severe Seborrhoeic Dermatitis (infectious eczematoid type) of 5 weeks duration on scalp and face.

500,000 units of Penicillin given and local treatment.

Result: Responded extremely well, much more rapidly than would have been expected with any other form of treatment. Discharged from hospital 14 days later, healed.

("Rapid Healing")

(3) Pte. P. R.A.M.C.

Admitted with recurrent boils on neck of one months duration.

500,000 units of Penicillin and local treatment.

Result: Boils showed steady healing from start, no new ones appeared, but result was not as dramatic as in examples above.

("Steady Healing")

(4)/



(4) Gnr. H. R.E.M.E.

Three weeks duration Seborrhoeic Dermatitis which had been treated in another hospital with various pastes, creams and stock vaccine. On admission there was widespread crusted Seborrhoeic Dermatitis of beard area, upper lips and eyebrows, also scattered ecthymatous lesions of neck, forearms and legs.

500,000 units of Penicillin and local treatment.

Result: All lesions dried up very quickly and skin showed steady healing from the start, no new lesions appeared.

("Steady Healing")

(5) Capt. G. R.A.

Admitted with a very severe infected and crusted Seborrhoeic Dermatitis of face and scalp.

500,000 units of Penicillin administered and local treatment.

Result: Improvement was slow and gradual but treatment was not abandoned.

("Slow Healing")

(6) Sgt. M. R.A.

Admitted/

Admitted with a history that for two months he had had a crusted, impetiginised Seborrhoeic Dermatitis of face and ears. Various local remedies had been used with very little permanent effect.

1,000,000 units of Penicillin and local treatment given.

Result: Dermatitis gradually improved then, for no reason that could be determined, suddenly relapsed.

("Improved and Relapsed")

(7) Gnr. B. R.A.

A case with Seborrhoeic Dermatitis (infectious eczematoid type) of face and scalp with fissuring at corners of mouth. Had proved very resistant to treatment with local therapy alone.

500,000 units of Penicillin and local therapy given.

Result: At end of course no obvious improvement had occurred.

("Condition Unchanged")

All the cases were under my personal care, as no "out" patients were included. On discharge from hospital/



It was not possible due to service conditions to carry out complete bacteriological examination on the cases.

### CHAPTER THREE.

#### ADMINISTRATION OF THERAPY AND TOXIC REACTIONS.

Penicillin was used both by intra-muscular injection and by local application.

##### Injection.

15,000 units were injected three hourly during the twenty-four hours, until the desired dosage was reached. This was usually 500,000 or 1,000,000 units. A special chart was kept, and each dose "ticked off" as it was given.

##### Local Application.

Penicillin was used locally in the form of a spray, cream and paste.

##### Spray.

This form of application as originally suggested by Taylor and Hughes (1944) (3) was used in most cases. The strength used to begin with was 500 units per c.c. Results were good and no cases showed signs of irritation or contact dermatitis, so the concentration was increased to 1000 units per c.c. This was the strength recommended by Twiston Davies (11). Spraying was done three hourly, using an ordinary throat spray (see photograph).



Hellier & Hodgson (1945)(4) recommended a strength of 500 units per c.c., stating that a strength of 200 units per c.c. increased the failure rate, whereas no advantage seemed to be gained by increasing the strength above 500 units per c.c. and the use of too strong a solution may lead to sensitisation, or at least irritation. Personally, in many cases now treated by spray in the strength of 1000 units per c.c., I have only seen one case of sensitivity. Again Hellier and Hodgson recommended spraying only three times per day, saying that more frequent sprayings had been tried without seeming to produce any better results. Spraying a solution on an area is, however, very different from using an ointment, or the solution soaked in gauze; it is much more difficult for the medicament to remain in contact for any length of time, especially on such an area as the face, and so I much preferred the spraying to be done three-hourly.

The/

The main advantages of this technique are, that it is simple to use, clean and economical, the solution is more stable than the cream, the orderlies do not touch the medicament or patient during treatment, and so there is no danger of cross infection from patient to patient, also Penicillin solution seems to be usually innocuous to the skin, unlike the ointment, the base of which irritates the skin of some patients. Twiston Davies' opinion was that - "No more effective method of administering Penicillin to cases of skin disease has yet been found than that of local spray" and MacKenna (14) also preferred the spray rather than the ointment in the treatment of Impetigo, again due to the fact that the ointment base irritated some skins. He used the solution in a strength of 500 un/cc. sprayed three hourly to the area.

#### Cream.

This was a 30% Lanette Wax Sx. in water cream and contained 500 units per gramme of Penicillin. It was used in the more crusted stages, spread on calico or simply smeared on the affected area, and in the treatment of out-patients. Wrong (1945) (5) and Peterkin (1945) (9) recommended a strength of 250 units per gramme. Roxburgh et al (7) used/

used Lanette Wax Sx. 25%, soft paraffin and water equal parts as a base, 250 units per gramme strength, and applied their cream once per day only.

The main advantage of the cream is, of course, its suitability and convenience for out-patient treatment. In a percentage of cases, however, the cream base will irritate the skin, and unfortunately the Penicillin will tend to deteriorate with time. Hellier has stated too that even when the cream base is autoclaved as per Ministry of Health instructions, sometimes the Lanette Wax undergoes a change with the production of acid, the low  $P_H$  of which destroys the Penicillin. In 1945 Taylor and Hughes to estimate the utility of Penicillin cream for out-patients, tested some which had been handled just as a patient would do, i.e. it was carried in a box in the pocket and each day it was opened, and a non-sterile finger put into it. They found that after a fortnight the potency of the Penicillin had only been reduced by 30%. More recently Waisman and Gots (1946) (18) remarked that although concentrations of Penicillin from 166 units to 1600 units and more per gramme of base have been prepared in ointments by different authors, they thought that the optimal/



optimal concentration probably lay in the lower levels of this range, and agreed with Garrod that there did not seem to be any great advantage in highly concentrated preparations for routine use, e.g. the ointment they used contained 800 units of Penicillin per gramme, but more recently they reduced the concentration of Penicillin to 300 units per gramme without any obvious loss of efficacy. They also had tried various ointment bases - emulsion type base, vaseline, vaseline with hydrous wool fat, cholesterol, and were not convinced that one base was materially superior in therapeutic effectiveness to another, with equivalent concentration of Penicillin. They, however, abandoned the emulsion base after a few instances of contact dermatitis had occurred, and at the present time were employing a base of simple vaseline.

Paste.

A trial was made using Lassar's paste containing 250 units of Penicillin per gramme, as it would have been extremely useful in an infected, eczematized skin to combine the anti-biotic action of Penicillin with the "eczema" healing properties of Lassar's paste. The clinical/

clinical results, however, were disappointing and were not superior to those when plain Lassar's paste was used, and so this form of treatment was abandoned.

### TOXIC REACTIONS.

These were especially looked for by dermatologists in view of the severe reactions which often followed treatment with the sulphonamide group of drugs. So far, however, one of the great advantages of Penicillin therapy is that toxic reactions to I.V. Penicillin are rare, and when used locally, very few cases of contact dermatitis are produced.

Kolmer (1945) in a survey of Penicillin therapy in the U.S.A., stated that the toxic reactions consisted chiefly of fever, headache, skin eruptions, tingling in the testes, thrombo-phlebitis and pain at the site of injection, but that the incidence of many of these reactions was constantly dropping due to better methods of purification of the drug, for according to Whitby (1945) (6) "not more than 40% of the tablet consists of pure Penicillin." There appeared to be no appreciable difference/

difference in the reactions, whether the salt used was sodium penicillin or calcium penicillin and Kolmer also thought that some cases of fever may be due to bacterial toxins following the anti-bacterial effects of Penicillin. Some Herxheimer reactions have occurred in the treatment of Syphilis. Cases of acute polyarthrititis have been described, one by Jaslowitz (1945) (8).

Graves, Carpenter and Unangst (1944) (12) described a different type of reaction. In two cases who had chronic infections, antecedent histories of dyshidrosis and foci of dermatophytosis in the feet, injections of Penicillin caused vesicular eruptions of the feet and hands with maceration and weeping of the groins. Both patients were sensitive to trichophyton and had previous histories of fungus infection. The interesting part to speculate is the possible cause of these reactions. Jadassohn (1937) has already proved that pathogenic fungi contain two antigens, one of which is specific to the particular fungus, the other is common to all fungi. Was it possible then, that the reactions described above were due to this fungus - antigen relationship? Another similar case to the above/

above was described (1944) by Binkley and Brockmole (13). A patient who had chronic dermatophytosis of the feet following a I.V. injection of Penicillin developed a confluent pustular eruption of the hands and feet, with oedema of the parts.

Peterkin (1945) (9) stated that 4.5% of cases treated with Penicillin cream locally developed a contact dermatitis, either to Penicillin or the cream base. Pyle and Rattner (1944) (10) reported a case of contact dermatitis from Penicillin in a medical officer who was in charge of preparing the various solutions as well as of administering the drug to patients. The eruption began as a mild marginal blepharitis and conjunctivitis. It soon spread to the bridge of the nose, the forehead and the central oval of the face. It now had the characteristics of a relatively acute dermatitis due to contact with an irritant. In the course of a few weeks eczematous lesions appeared on the hands and penis. When the patient was relieved of handling Penicillin, the eruption completely disappeared in a fortnight. When he was again exposed to Penicillin, the eruption recurred. A patch test with Penicillin elicited a strong positive reaction/

reaction. Additional patch tests indicated that it was the Penicillin and not the medium on which it was cultivated which was responsible for this contact dermatitis. Wrong (1945) reported one case in a man who was having a Sycosis Barbae treated with Penicillin cream (250 units per gramme); on the seventh day of treatment the area became slightly red and itchy, the following day the face appeared worse and Penicillin was discontinued, five days later patch tests to Penicillin cream were made. This test was repeated with a different make of Penicillin six weeks later, and again were positive. Michie and Bailie (1945) (2) reported a similar case, a contact dermatitis to Penicillin powder (without sulphonamide vehicle), with positive patch tests. Gottschalk (1946) (15) reported a much greater percentage of cases of contact dermatitis which developed during the treatment of forty-eight patients, five patients (10.4%) developed contact dermatitis during treatment with a penicillin ointment, in two of these patients, patch tests were positive to Penicillin only. Exactly one year previously (1945) Cohen and Pfaff (16), investigating the incidence of sensitivity to a Penicillin ointment (50,000 un. to the oz). tested 524 patients with patch/

patch tests. In this group five patients (.95%) gave a positive reaction. Thus it seems quite definite that the occasional case of sensitivity to Penicillin during local treatment will occur. In the vast majority, however, the irritant will be found to be the cream or ointment base, not the Penicillin.

The toxic reactions I have seen have been very few. They are:-

		<u>No. of cases.</u>
(1)	Fever ... ..	4
(2)	Fever and Urticaria .. ...	3
(3)	Fever, Urticaria and Polyarthrititis ... ..	1 (2 U.S.)
(4)	Contact Dermatitis ... ..	4 (1 U.S.)

In four cases high fever occurred during the administration of Penicillin. The temperature was elevated to 103° app. and there was general malaise, very like the effect of intravenous T.A.B. Two of the cases occurred in patients in the same ward and having their injections from the same bottle. In all of these cases the fever was thought to be due to impurities in the particular bottle or batch of Penicillin being used, as treatment was continued by changing to another batch of/

of Penicillin.

Three cases had fever and generalised urticaria which disappeared when the injections were discontinued. One case had fever, generalised urticaria and polyarthrititis and I have seen two similar cases demonstrated in a U.S. Military Hospital. The details of my case are given below:-

Sgt. S. R.M.

Admitted with a relapsing Seborrhoeic Dermatitis of face, eyebrows and ears. He had been having treatment for one month, before admission, with various local remedies.

19.3.45. Penicillin started 15,000 units 3 hourly.

27.3.45. 945,000 units had been given when the patient suddenly developed a temperature of 102°, widespread urticaria and swelling and stiffness in joints of fingers, wrists, elbows and shoulders, also slight swelling of lower lips. Penicillin discontinued.

31.3.45. Swellings and urticaria gone.

I have seen four cases of proved contact dermatitis myself, and saw one case demonstrated in a U.S. military hospital.

CASE/

CASE 1.    Capt. R.    P.C.

Admitted to hospital with a corneal ulcer of R. eye and a mild Seborroic Dermatitis. Treatment of the eye condition was carried out in the eye department of the hospital and consisted of homatropine drops and Penicillin powder. An acute contact dermatitis developed, sharply marginated round eye with swelling. The diagnosis first made was Atropine sensitivity and all treatment was discontinued. The dermatitis cleared. Penicillin powder was again used and again a marked contact dermatitis developed. At this time, Penicillin contacts were so rare that it was thought that the powder must contain Sulphonamide as a vehicle, but this was found not to be true. This patient gave positive patch tests to Penicillin, and later again developed a contact type of dermatitis when another doctor treated his Seborrhoeic dermatitis with Penicillin cream.

CASE 2.    Pte. M.

Admitted with a crusted Seborrhoeic Dermatitis of ears and face which had been treated a week previously with Penicillin cream. Treatment at first was boric soaks to remove crusts, then Penicillin cream was applied.

An/



An acute contact dermatitis occurred which settled on other simple treatments. Patch tests were positive to a solution of Penicillin 250 units/c.c. strength.

CASE 3. Sgt. S.

A few small crusted lesions on the R.side of his face had been treated with pure Penicillin powder.

4.3.46. Examination showed an area of sharply demarcated dermatitis on R.side of face. A contact dermatitis was considered but treatment continued, using Penicillin spray.

5.3.46. Face very much worse - acute weeping contact dermatitis. This was treated with . Calamine and Lassar's paste and settled down.

Patch tests to Penicillin solution 1/1000 un/c.c. revealed

	<u>24 hrs.</u>	<u>48 hrs.</u>	<u>72 hrs.</u>
Penicillin	-	+ +	+ +
Water	-	-	-

CASE 4.

This was really a contact dermatitis to Penicillin/

Penicillin cream base only, as treatment was continued with good results using the solution.

S/M T.

On examination: acute scattered seborrhoeic sycosis of beard area.

22.1.46. Treatment started with Penicillin cream.

26.1.46. Acute contact dermatitis developed on area under treatment. This was thought probably due to the cream base only and treatment was changed to spray.

28.1.46. Steady improvement.

31.1.46. Skin completely settled down and now ready for Quinolol ointment.

The case demonstrated in the U.S. hospital was very similar to the one reported by Pyle and Rattner (10), a hospital nurse taking the place of the medical officer. It was this nurse's duty to prepare and administer all the Penicillin used in the hospital. She developed a contact type of dermatitis of the first and second fingers of the right hand. This healed when she did other duties, and relapsed as soon as she resumed working with Penicillin. The dermatitis was caused by Penicillin solution running down the side of the syringe on to her first and second fingers. Patch tests to Penicillin solution were positive.

There/

There is no doubt then that Penicillin can cause toxic reactions and contact dermatitis, but these are rare and so far no severe reactions comparable to those produced by the sulphonamide group of drugs have been reported. Those due to intramuscular Penicillin are of the protein shock, urticarial variety, many must be due to impurities as treatment can often be continued by changing to a different bottle or batch of Penicillin. The reactions which appear to be due to Penicillin itself settle down when the injections are discontinued.

The local reactions are of the contact dermatitis type, so far there is no evidence that severe sensitisation reactions follow on later administration of Penicillin after having been sensitised by previous local therapy. Again, there is no proof yet that Penicillin has a photosensitising effect on the skin. Locally, although Penicillin solution is largely innocuous to the skin, when the cream is used, some skins, especially the Seborrhoeic type, are irritated by the base.

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CHAPTER FOUR.  
CLINICAL SCOPE.

The following number of cases have been treated.

1.	<u>SEBORRHOEIC GROUP.</u>	<u>No. of Cases.</u>
	I. IMPETIGINISED SEBORRHOEA	8
	II. SEBORRHOEIC SYCOSIS (acute)	
	Parenteral      4)	
	Local only      9)	
	TOTAL	13
	III. SEBORRHOEIC DERMATITIS	
	Parenteral      50)	
	Local only      50)	
	TOTAL	100
	TOTAL	<u>121</u>
2.	<u>SYCOSIS BARBAE</u>	19
3.	<u>FURUNCULOSIS</u>	
	Acute	17
	Chronic	54
	TOTAL	71
	<u>COMBINED TOTAL</u>	<u>211</u>

There are many factors which

influence the development of

the skin and its appendages

and these factors are

the result of heredity and

environment. The study of

the physiology of the skin and its

appendages is of great importance

in the diagnosis and treatment

of many diseases.

The study of the skin and its

appendages is of great importance

## **PART TWO**

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### **SEBORRHOEIC CONDITIONS**

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There are many views as to the etiology of the Seborrhoeic group of skin diseases. Some believe simply that the various conditions are due to infection with a specific organism, e.g. Cranston Lowe (1939) (23) considers the Pityrosporon of Malassez to be the cause, and Mackenna (1942) (19) states - "The causal organism is the Pityrosporon of Malassez and the saprophytic microbacillus of Sabourand," although he also considered diet and mode of life to be other important etiological factors. Roxburgh (1944) (21) says - "Seborrhoeic Dermatitis is an acute and chronic inflammation of the skin caused primarily by the Pityrosporon, but with the assistance of other yeast like organisms plus staphylococci and/or Streptococci. Becker and Obermayer (1940) (20), "The cause of Seborrhoeic Dermatitis is evidently an infectious organism, although of course seborrhoea is a necessary prerequisite." Sutton and Sutton (1939) (22) "It is probable that Seborrhoeic Dermatitis is a specific infectious dermatitis and that many of the ezcematoid lesions commonly encountered in the so-called seborrhoeic regions are other forms of specific dermatitis or in combination with Seborrhoeic Dermatitis." The laxity and tendency to over/

over diagnose this condition is quite definite and was well expressed by Williams (1935) who said, "I can see no sense in calling a dermatitis of undetermined origin "Seborrhoeic Dermatitis" just because the patients happen to have a little dandruff."

Bacteriologically, Sabourand (1904) reported the following findings:-

- |                             |   |  |
|-----------------------------|---|--|
| <u>Pityriasis Sicca</u>     | - | P. ovale plentiful.  |
| <u>Pityriasis Oleosa</u>    | - | P. ovale present with perhaps Staph. Albus.  |
| <u>Seborrhoeic Oleosa</u>   | - | P. ovale and Staph. plus the micro bacillus, if the hair is falling out, but without if the hair is healthy. |
| <u>Seborrhoeic Corporis</u> | - | P. ovale usually present.  |

MacKee and Lewis (1939) in the study of the flora of one hundred scalps corroborated Sabourand in the main. They said, however, that P. ovale may be as profuse in scalps of normal appearance as in cases with severe dandruff. Barber, who popularised the comprehensive title of "Seborrhoeic State" suggested that the Pityrosporon of Malassez, the Acne bacillus and Staph. albus are normal habitats/



habitats of the skin of civilised man. On healthy skin they live a quiet saprophytic existence, but if conditions become favourable they increase and multiply and produce reactions in the skin which vary according to whichever of the organisms is predominant. The more important factor in producing these activities is "seborrhoea" which he defines as "an excessive and altered secretion from the sebaceous glands, and a change in the composition of the fat in the horny layers." This tendency to seborrhoea may be inherited, and in a person with this predisposition, the factors of age and sexual evolution have to be considered.

He considered that in the development of the seborrhoea state, diet and mode of life are aetiological factors of the greatest importance, e.g. a sedentary mode of life, associated with lack of exposure of the body to sun and air, excess intake of carbohydrates, especially cane sugar and white bread and of fats, especially the fats of pigs and milk, are all liable to prevoke seborrhoea, and it is probable that the composition of the skin can be influenced by the over ingestion, or the ingestion of special forms of fat.

This/

This, then, tends to follow the more modern view that the Seborrhoea state, rather than a simple infection with the *Pityrosporon* is of much more complex character. The subject, however, is still highly controversial.

Other views are:

Russell Brain (1942) (24) The importance of the constitutional factor is generally accepted. The subject may be plumb and placid or thin and nervous, but both types have moist, greasy skins, have generally a liking for carbohydrates and are always very prone to infections of their skins and mucous membranes.

Montgomery and Culver "Lowered vitality, indigestion and excessive amounts of oily foods, particularly butter and cream, chocolate and cod liver oil are predisposing factors."

Avit Scott (1944) (26) "In my opinion the Seborrhoeic diathesis is due partly to dietetic indiscretions, namely the tendency to conserve carbohydrate in excess, and to the deficiency of certain hormones in the circulation," which he thought was the result of a "congenital or acquired imbalance between the oestrogenic and androgenic hormones/

hormones."

Ingram (1939) drew attention to the general temperamental instability of seborrhoeic individuals.

That there was a tremendous increase of this condition during the war years was quite evident to anybody practising dermatology at this time. In the army, this was especially so, e.g. Mason Bolam (1945) (25) says - "Seborrhoeic Dermatitis, in one or other of its forms, is probably the most common of all skin diseases seen in the out-patient department of military hospitals to-day," and the consultant dermatologist to the army (Brig. MacKenna) (1944) said, "The so-called seborrhoeic state and seborrhoeic dermatitis play a larger part in the etiology of the infective dermatoses than has hitherto been recognised. The seborrhoeic element makes the patient abnormally vulnerable to infection, and modifies the course of the disease."

The cause of this increase was generally explained in relation to the changes in the national diet which took place during the war years. Russell Brain (1942) (24) said "Nervous and anxiety states, limitations of protein and protective foods and restricted facilities for personal/

personal hygiene were the aggravating factors and Avit Scott (1945) (26) - "The increase was due to the fact that the present war compelled the British people to modify the national diet from one which contained an excess of protein to one where carbohydrates were markedly predominant." He also thought there tended to be a deficiency, not only of protein but of Vitamins (chiefly C), and inorganic salts, but that the rationing of fats was probably beneficial.

The conditions which I include in the seborrhoeic group are:-

- (1) Pityriasis Capitis.
- (2) Seborrhoea Corporis
- (3) Impetiginised Seborrhoea.
- (4) Acute Seborrhoeic Sycosis.
- (5) Seborrhoeic Dermatitis or Eczema.

Penicillin was only used in treating, Impetiginised Seborrhoea, Ac. Seborrhoeic Sycosis and Seborrhoeic Dermatitis.

The treatment of the infected seborrhoeic group is usually aimed at (1) clearing the infection, (2) treating the dermatitis, and (3) treating the scalp and residual patches/

patches with various "seborrhoeic ointments," which usually contain sulphur in some shape or form. The local preparations used are so numerous and varied, that no useful purpose would be served by detailing them here.

As regards general treatment, there are various schools who consider it important to "alkalise" the patient, restrict diet (especially carbohydrates), increase vitamins etc. I, personally, did not notice any difference clinically whether a patient was "alkalised" or not, and although many of these patients do look very similar to true cases of riboflavin deficiency, liberal injections of this vitamin never appeared to have any beneficial effect on any patient under my care. I would, however, stress the importance of fresh air, and complete freedom from smoky, heated atmospheres during treatment. Many of these patients look "pasty faced" and generally have an "unfit" look about them and I find the general tonic effect of plenty of fresh air of distinct value, in generally toughening the skin and preventing relapse. Again, it is very common for an acute relapse to follow a visit to a heated, smoky cinema and so until completely cured, all such atmospheres should be avoided.

The/

The use of the Sulphonamide group of drugs, either locally or generally, in a condition which is liable to be chronic, with frequent relapses, is such a risky business from the point of view of severe sensitisation reactions that, personally, I never use them. There is not a more pitiable sight than a seborrhoeic individual with a severe sulphonamide sensitisation reaction e.g. Sulphonamide Light Dermatitis.

Any treatment then which would clear the infection quickly and safely, and so allow earlier treatment of the dermatitis, would be of distinct value in this group of conditions, as cases would not so readily become 'chronic' and 'eczematised,' and relapsed would be fewer. This briefly is what was hoped Penicillin would achieve.

The literature on the subject is still scanty. Hellier and Hodgson (1945) (27) say - "Penicillin is of definite value in the treatment of seborrhoeic dermatitis if used judiciously, but it can only clear up the infective element and has no action on the underlying eczema or other condition. One great advantage of Penicillin is that it is hardly ever irritating and so there is little danger of aggravating an already inflamed skin, as may happen with other antiseptics."

Twiston/

Twiston Davies (1945) (28) - "Penicillin spray (1000 un. per c.c.) is occasionally more effective than other remedies in the treatment of cases of impetiginised seborrhoea and seborrhoeic dermatitis, but such effect is largely unpredictable. Some 40% of cases within the group of undifferentiated cases of seborrhoeic dermatitis and impetiginised seborrhoea are unusually resistant to therapy either by Penicillin or any other remedy." Grant Peterkin (1945) (29) "intra muscular Penicillin was used only in the severe and chronic cases of Seborrhoeic Dermatitis with crusts and weeping 'red-heads,' Local Penicillin was also used. The results were disappointing, only three cases healed out of nineteen treated, four were either I.S.Q. or worse. There appeared to be no indication for Penicillin in these cases." Roxburgh et al (1944) (30) "Two cases of generalised seborrhoeic dermatitis were treated, one failed to respond with ointment but recovered temporarily when solution was sprayed on to the affected area, the other responded to ointment only in areas where secondary infection was marked. A third case in which the disease was confined to the scalp cleared up well when treated with ointment (secondary infection with Staphs. was present)." Taylor and Hughes (1944) (32) discussing the treatment/

treatment of various infective dermatoses with Penicillin spray. "An underlying seborrhoeic state in cases of sycosis and impetigo is liable to cause relapse soon after cessation of treatment, and necessitates further courses of treatment."

THE CASES.

The following types and numbers have been treated.

	No. of cases.
(1) Impetiginised Seborrhoea	7
(2) Seborrhoeic Sycosis (Ac).	
Parenteral	4)
Local only	9)
TOTAL	13
(3) Seborrhoeic Dermatitis	
Parenteral	50)
Local only	50)
TOTAL	100
COMBINED TOTAL	<u>120</u>



THERAPEUTIC RESULTS AND CONCLUSIONS.

IMPETIGINISED SEBORRHOEA.

TABLE I.

	No. of Cases	Treatment		Complications.
		Spray.	Cream	
Rapid Healing	3	3	1	
Steady Healing	3	1	2	
Improved and Relapsed	1	1	1	Contact Dermatitis to ?Cream base.
No change	1		1	
TOTAL	8			

It is essential, from the point of view of response to treatment and prognosis to differentiate between "simple impetigo" i.e. the ordinary crusted or circinate impetigo and an "impetiginised seborrhoea." The latter condition is notorious for its frequent resistance to treatment. For, whereas, cases of ordinary impetigo clear up with most simple forms of therapy within ten days, some cases of impetiginised seborrhoea persist for many weeks. Because of this, they are ideal cases for developing contact dermatitis to whatever medicament/

medicament is being used, the most common, at the moment, being Mercury and Sulphonamide.

As most of these cases were treated as out-patients, very few appear in this series, and to save supplies, routine treatment with Penicillin was not used, but other methods were tried first, e.g. Ichthyol or a weak Mercury paste. When, however, ample supplies were available, Penicillin used as a spray or cream will be the treatment of choice, due to its specific action on any Penicillin sensitive infecting organism and also the the very important factor of its being non-irritating. These cases will however still tend to relapse as long as the Seborrhoeic element remains unsolved.

ACUTE SEBORRHOEIC SYCOSIS.

TABLE II

	No of CASES	DOSAGE OF PENICILLIN i.m.		LOCAL PENICILLIN			QUIN- OLOR.	COMPLICATIONS
		1,000,000	500,000	SPRAY	CREAM	PASTE		
	CASES	1,000,000	500,000	SPRAY	CREAM	PASTE	OINT	COMPLICATIONS
Rapid Healing	2	-	2	1	-	1	-	-
Steady "	1	-	1	1	-	-	-	1 contact dermatitis to Penicillin Cream? base.
Slow Healing	1	1	-	1	1	-	1	
Improved and Relapsed	2	-	2	-	-	1	-	

TOTAL

6

TABLE III - CASES TREATED WITH LOCAL PENICILLIN ONLY.

	No. of Cases	Local Penicillin.			Quin. oint. used.	Complications.
		Spray.	Cream.	Ungt.		
Rapid Healing	2	2	-	-	2	-
Steady "	5	4	1	1	3	-
Improved and Relapsed	2	-	2	-	1	-

This condition is one of the most disappointing and exasperating to treat in the whole of dermatology. A typical case would show scattered papules, papules-pustules and small crusted lesions at the hair follicles, usually scattered widespread over the beard area. The course of the condition is quite unpredictable, many cases relapsing for no apparent reason, and some, because of their chronicity develop Contact Dermatitis to whatever medicament is being used. If Penicillin then could control the infection quickly and safely and allow treatment with Quinolol ointment to be started early, fewer chronic cases would result and, in many, relapse would be prevented.

Only a small number of cases appear in this series, a much larger number were treated as out-patients. It soon became/

became evident, however, that the use of Penicillin did not guarantee cure with no relapse, and briefly, Penicillin will control the initial infection safely, in most cases but will not abolish the inherent tendency of this disease to relapse. It is, therefore, no "cure-all" but has a definite place in treatment.

The use of the spray was much preferred to the cream, the lesions usually being so widely scattered over the beard area, that it was found much more convenient and cleaner to spray the Penicillin in solution than to use it in a cream base. Again, Contact Dermatitis is more common in cases treated with cream than with spray, and one case in this small series demonstrated this fact very well.

Sgt. Maj. T.

on examination: Ac.scattered Seborrhoeic Sycosis of beard area.

22.1.46. Treatment started with Penicillin cream

24.1.46. Ac.Contact Dermatitis developed on area under treatment. This was thought to be due, probably, to the cream base only and treatment was changed to spray.

28.1.46. Steady improvement.

31.1.46. Skin completely settled down and now ready/

ready for Quinolor ointment. Uneventful recovery.

In my opinion then, the best treatment for this type of case now is (1) If very severe, a small course of 1 M. Penicillin. Locally use the spray until the area has 'settled down' and infection is controlled. No shaving should be allowed in the acute stage. If there is any small crusted lesion treat these with a paste, e.g. 1% H.A.D. in Lassar's paste. When the area is completely quiescent with papular lesions only remaining, change treatment to Quinolor ointment. The continued use of this ointment for a period after apparent cure, apart from small fractional doses of X-Rays, is the only form of treatment which may prevent future relapse.

#### SEBORRHOEIC DERMATITIS.

TABLE IV/

SEBORRHOEIC DERMATITIS.

TABLE IV

1 M Penicillin.

	NO	%	DOSAGE 4 PENICILLIN 1 M.			LOCAL PENICILLIN			REACTIONS				DURATION Before PENICILLIN STARTED			
			500,000	1,000,000	500,000 + 350,000 S.	SPRAY	CREAM	PASTE	ANGINA	URTICARIA	ERYTHEMA	DOX. ASTHMA	DAYS	WEEKS	MONTHS	YEARS
Rapid Healing	10	20	7	1	2	1	-	1	-	1	-	-	3	2	4	
Steady "	17	34	16	1	-	2	2	2	-	-	-	-	2	4	2	-
Slow Healing	4	8	3	1	-	-	1	-	-	-	-	-	1	-	-	2
Improved and Relapsed	11	22	6	4	1	1	3	1	1	-	1	2	2	4	1	
Improvement slight	3	6	2	1	-	-	-	-	-	-	-	-	1	-	-	
No improvement	5	10	3	2	-	-	1	-	-	-	-	-	2	-	1	

TOTAL 50

27 cases (54%) showed either "steady" <sup>or</sup> and "rapid" healing when treated with 1 M. Penicillin, 12 cases (24%) "improved" then "relapsed" before complete healing took place, and in 5 cases (10%) there was no improvement at all.

500,000 units of Penicillin given in 15,000 units 3 hourly was the commonest dosage.

15 cases had local Penicillin therapy as well as 1 M. Penicillin. In 3 cases (6%) there was some form of reaction during administration, either due to the Penicillin or impurities. They were

One case of Pyrexia (like a protein shock).

One case of Urticaria.

One case of Urticaria + Polyarthrititis.

All the symptoms and signs disappeared when administration of Penicillin was discontinued.

One patient while having a course of 500,000 units developed a typical Erysipelas.

The duration of the disease before treatment tended to be larger in the "improved and relapsed" series, but did not appear to be of paramount importance, e.g. in 10 cases which showed "Rapid healing," four had a duration of "years," whereas the total of the "Improved and Relapsed" and "Improvement Slight" and "No improvement" (19 cases) in years was only two.

TABLE V

LOCAL PENICILLIN.

	NO	%	LOCAL PENICILLIN			DURATION BEFORE PENICILLIN STARTED				COMPLICATIONS
			SPRAY	CREAM	PASTE	DAYS	WEEKS	MONTHS	YEARS	
Rapid Healing	6	12	3	3	-	-	3	2	-	-
Steady "	19	38	3	12	4	-	6	6	-	-
Slow Healing	8	16	-	6	2	-	1	4	-	-
Improved and relapsed	7	14	-	5	1	-	1	1	-	-
Improvement slight	5	10	-	3	2	1	1	1	-	-
No improvement	5	10	-	3	2	1	1	-	-	-

TOTAL

50

There is a great similarity in numbers between the I.M. Penicillin treated group of cases and the local group, e.g.

	I. M. Penicillin.	Local Penicillin.
Rapid Healing	10	6
Steady "	17	19
Slow Healing	4	8
Improved and Relapsed	11	7
Improvement slight	3	5
No improvement	5	8
TOTAL	50	50

25 cases (50%) showed either "steady" or "rapid" healing when treated with local Penicillin, 7 cases (14%) "improved but relapsed" before healing was complete. In 5 cases (10%) there was no improvement.

Penicillin cream was the commonest form of application.

There were no cases of contact type of dermatitis in this series. Once again although one feels that the previous/



previous duration of the disease is important from a prognostic point of view, the figures did not especially emphasise this. It was also common to find early but unsustained healing. For the first few days the impression gained was that therapeutic benefit was occurring, but healing gradually slowed, or else just as healing appeared complete, fresh lesions developed, so that the total duration of treatment was lengthy.

#### DISCUSSION.

In a typical case of Seborrhoeic Dermatitis, there are three elements to attack:

- (1) infection
- (2) dermatitis or eczema reaction.
- (3) seborrhoea state.

Penicillin was not expected to influence directly either (2) or (3) and so there will always be a considerable number of cases which will continue to relapse until the hypothetical cause of the "seborrhoea state" is discussed.

Penicillin has, however, a definite place in treatment, because it is the weapon which will clear the infection quickly and safely in Penicillin sensitive infecting organisms. I would again stress that Penicillin will do this safely, which is very different from the Sulphonamide/

Sulphonamide group of drugs.

Initially, a course of 1.M. Penicillin plus the use of the spray locally, will in most cases control the infection quickly, and so enable the "dermatitis" element to be treated earlier. It is reasonable to expect, therefore, that fewer cases will become chronic, if the infective element is cleared quickly. Latterly, the use of the spray was much preferred, because of its cleanliness, ease of administration and absence of irritation.

To prevent relapse, I would suggest a period of convalescence or, better still, rehabilitation of the skin, preferably in an area where there is plenty of opportunity for light work out of doors. During this time, careful toilet of the scalp, prompt attention to any fissures which may develop round the ears and on the beard area, careful shaving with a brushless type of shaving cream and perhaps continuing with Quinolone ointment for a period, even after apparent cure. These are all details of treatment which are considered to be important.

IMPETIGINISED SEBORRHOEA.



4th Aug. 1945



13th Aug. 1945

Dvr. Y. R.A.S.C.

History of one month's duration.

4.8.45. Treatment started with Penicillin spray of 1 1000 u/ccs

6.8.45. No active lesions now seen - area dry and crusted.

Penicillin cream.

Result: "Steady Healing"

SEBORRHOEIC SYCOSIS (ACUTE)



23rd July 1945



28th July 1945.

Fus.D.

Two/

Two weeks duration.

23.7.45. Treatment commenced with Penicillin 1. ~~m~~. 500,000 and spray locally. Rapid healing followed.

28.7.45. Face clear of infection except for a little crusting of R. eyebrow.

Result: "Rapid Healing."

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PART THREE

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SYCOSIS BARBAE.

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## SYCOSIS BARBAE.

Sycosis is a chronic folliculitis or perifolliculitis, especially of the bearded region, although the scalp may also be involved. The essential macroscopic lesions are, deeply seated and superficial papules and pustules pierced by hairs. In many cases there is an associated Pityriasis Capitis and a tendency to seborrhoeic eruptions, and many dermatologists consider that a more exact diagnosis of many of these cases would be a chronic infected seborrhoeic dermatitis. Blepharitis is common too, and MacKenna (36) noted that examination of patients with Sycosis in out-patient clinics often showed that many of them had severe blepharitis in childhood which had left them with scanty eyelashes and reddened lid margins, and he considered that there was little doubt that this early affection had a direct etiological relationship with the sycosis of adult life.

As regards further etiology, the vast majority of patients live under poor social and economic conditions, and are city dwellers. Cranston Low (1939) (35) said, "Sycosis is a fairly common disease in hospital practice, but rare in private practice." "Lowered resistance" of the patient is usually considered important, and Ingram (1938) drew attention to the frequency of antral and other sinus infections in chronic sycosis. This fact has been recently/

recently stressed by another member of Leeds. G.I. (F.F.Hellier) (1946), who investigated a number of patients for evidence of a focus of infection, especially antral and nasal. The results are in the following table.

Cases investigated for chronic sinus infection.

No. of cases:	39
Definite Infection (positive proof puncture of sinus or definite opacity to X-rays)	21
Negative	15
Doubtful	3

In a further 26 cases considered as likely to have a focus of infection, 15 had no focus, 3 had a dental focus and in 8 patients it was not possible to carry out full investigations.

It is commonly believed that impetigo in the adult male may pass on to Sycosis if treatment is inadequate, but more probable the type of organism, its power of resistance to antiseptic applications, and the defensive reaction of the patient are the factors which decide whether sycosis will develop or not. I was especially struck by this fact on observing soldiers evacuated long distances from the Western Desert with very severe "impetigos" and infective dermatitis of the face, many of whom had gone for days without treatment of any kind. The Desert Army was/



was exceptionally fit and healthy and these cases always cleared up quickly with simple treatment without any residual Sycosis.

The disease is usually obstinate and persistent, often extremely difficult to cure, very prone to relapse, and seldom disappears spontaneously. As Peck (1934) stated, the problem of cure is probably one primarily of altering the flora and soil.

Sycosis has long been recognised as being one of the most intractable disorders of the skin. Almost all the antiseptics and other medicaments used have proved unsatisfactory and the classical constitutional remedies intended to increase the resistance of the patient have proved of little value.

Grant Peterkin says he has never seen a true sycosis in a farmer type of patient, and certainly most of the patients seen are city dwellers, have an "unhealthy look" about them and so it is reasonable to think that an improvement in general health with plenty of open air exercise, would prove beneficial.

Avit Scott recommends his anti-seborrhoeic diet plus vitamin C, and he also thinks that Destrone given early may help. MacKenna (36) recommended treating "ill-health" plus the use of vitamins and correcting anaemia. Ingram decreases the intake of fluids and carbohydrates and Becker &/

& Obermayer (37) and Burrow and Russell (38) all recommend the use of generalised light therapy.

There seems general agreement that all obvious foci of infection should be attacked vigorously, e.g. sinuses, dead teeth, root abscesses, pyorrhoea, infected tonsils, prostate. This is especially though important by Ingram, Roxburgh, (34), Cranston, Low (35), MacKenna (36), and Hellier in this country, and the Suttons (33) in U.S.A.

Vaccine therapy has been said to have given brilliant results in some cases, but in many instances there is no ensuing benefit. Roxburgh (34) found injections of Manganese, toxoid or vaccine of no use. MacKenna (36), "Vaccines were not effective." Autogenous preparations are preferred by Sutton (33), mixed staph. vaccine was recommended by Barber and Forman (1931). Staph. toxoid was carefully tested by Forman (1935) in 21 cases in which its use was followed by 2-fold to 24-fold increase in the anti-toxic titre of the blood, but not by clinical benefit. With toxoid therapy, Connor (1935) claimed cure of 12 of his 23 cases, and improvement in the remainder. Local and general reactions were observed, but these were few.

As stated previously, almost all preparations which can be applied externally to the skin have been used in the treatment of sycosis, and every centre and dermatologist have/

have their own favourites. It would serve no useful purpose detailing them here. Many cases are made much worse by over-treatment and MacKenna (1942) (36) especially deprecates too energetic treatment of the type. "Here is a pus infection, use strong antiseptics and the causal organism will be destroyed," what usually happens is that the vitality of the tissues is lowered, the organism sheltering in the follicles remains almost unaffected, and the disease progresses actively.

It is, however, worth while mentioning (1) manual epilation of the affected hairs, (2) the use of Ung. Quinolol Co., which has a definite place in treatment and (3) X-ray therapy. At one time it was thought that temporary epilation with X-rays had solved the problem, but only too often it failed, leaving the still worse problem of whether re-epilation should be attempted. Avit Scott (1945) also deprecates the use of too strong applications and X-rays, but in general, the use of careful radio-therapy in the treatment of sycosis has met with general adoption and considerable satisfaction.

When Penicillin became available, there were great hopes that at long last a new chapter in the therapy of sycosis was about to be opened, and that quick permanent/

permanent results would be achieved. That this was not so was first pointed out by Roxburgh (1944) (40) who treated 15 long-standing cases with an ointment containing 400 units/gram and was of the opinion that while Penicillin could by no means be relied upon to produce a lasting cure in all cases of Sycosis barbae, it could in individual cases produce results unobtainable by any other means, and so, if only for this reason, it had a definite place in the treatment of the disease. Sulzberger (1944) (41), commenting on this, stated that the great advantage of the drug was often in its lower irritancy and toxicity rather than in its greater effectiveness. Wrong (Feb.45) (39) treating 24 cases with Penicillin cream 250 units/gram thought that the results in the treatment of sycosis barbae were the best obtained by any topical remedy, but the treatment was by no means a cure-all, and relapses were frequent. He considered that Ung.Quinolol Co. was of definite value in preventing relapse.

Grant Peterkin's opinion using Penicillin cream 250/units/gram, was that temporary improvement was obtained which gave X-rays a better chance to produce a permanent cure. du Boulay (Jan.46) (43) treating 5 patients with long standing sycosis, with a 200 unit strength cream, was of/

of the opinion that all improved very greatly after two weeks treatment. Over a number of months the improvement was found to fluctuate and reach a stage in which a few pustular follicles persisted in appearing. In spite of this the patients found the treatment more satisfactory than any they had had before; by the daily use of the cream after shaving they were able to keep the sycosis very well in check. Burrows, Russell and May (Jan.45) (38) treating 21 cases of sycosis varying from 14 years to 8 weeks in duration with a 200 unit strength of Penicillin cream, found that the cases were cleared, or were still improving with treatment over a period of 5 to 6 weeks. No improvement resulted from the treatment of 2 cases due to insensitive strains of bacteria. Goldberg (Sep.45) (44) said, "One of my most disappointing discoveries has been that sycosis barbae does not respond effectively to Penicillin ointment, and to date, I have treated about 30 patients." However, Cohen and Pfaff's (45) opinion was that "the rapid sterilization of the infected area assures penicillin an important place in the therapeutic armamentarium of sycosis barbae. The results obtained with Penicillin in the treatment of sycosis barbae can be classified as satisfactory." Gottshalk et al (46), exactly a year later (March 1946) said "Sycosis vulgaris is definitely improved/

improved in some cases when penicillin ointment is used, but the results do not appear to be any better than those obtained with the use of compound ointment of oxyquinoline sulphate."

Recently (July 1946) I have had details of results of treatment by Hellier of Leeds of almost 50 cases of sycosis barbae. The results are shown in the following tables.

CASES OF SYCOSIS BARBAE TREATED AT LEEDS. G.I.  
WITH PENICILLIN.

Immediate response to treatment.

No. of cases	47
Cleared with treatment	36 (76.6%)
Improved only	3 ( 6.4%)
Failed	8 (17%)

Average length of treatment 4 to 5 weeks.

Follow up, at end of three months.

No. of cases	36
Healed	13 (36.1%)
Relapsed	23 (63.9%)

Final results.

No. of cases	47
Cured	18 (38.3%)
Controlled only	16 (34%)
Not influenced	13 (27.7%)

RESULTS.

TABLE VII

Immed. Result.	Duration.			Previous Treatment with Pen.	Penicillin Treatment		Late Result.	Foci Sepsis.	Quin. oint. used	X-ray Treatment.
	Wks.	Mths.	Yrs.		I.M.	Local				
1. Rapid Impr.	-	-	-	-	500,000	Paste	Healed	-	Yes	-
2. "	-	-	1	500,000 i.m. spray Cream.	-	Spray	"	-	"	Yes
3. Steady	-	8	-	Cream.	500,000	-	Relapse	-	-	-
4. "	-	-	-	1,000,000	500,000	-	"	Sinus	Yes	-
5. "	-	-	2	Cream	-	Cream	Healed	-	"	Yes
6. "	-	3	-	-	-	"	"	-	"	"
7. "	-	6	-	Cream	-	Spray	"	-	"	-
8. "	-	-	4	500,000 Cream	-	Cream	Relapse	Root Abscess	"	Yes
9. "	-	11	-	-	-	"	-	-	"	-
10. "	-	-	3	-	500,000	"	-	-	"	-
11. "	2	-	-	-	-	Spray	-	-	"	-
12. Slow Impr.	-	6	-	1,000,000 Cream	-	Cream	Healed	-	-	Yes
13. "	-	9	-	650,000 Cream	500,000	"	Improved	-	Yes	-
14. "	-	-	3	-	-	"	"	-	-	-
15. "	-	-	-	Cream	-	Spray	Relapse	-	Yes	-
16. "	-	-	2½	Spray	-	"	"	Pros- tate	"	-
17. "	-	-	12	Cream	-	Cream	Improved	-	Yes	-
18. "	-	-	3	-	-	Cream	-	Root Abs- cess	"	-
19. "	-	3	-	-	-	"	-	-	"	-

19 cases were treated with a previous duration of sycosis which varied between 2 weeks and 12 years. Response to treatment was noted as:-

(1)/



- (1) Rapid Improvement.
- (2) Steady Improvement.
- (3) Slow Improvement.

"Steady Improvement" meant that cases progressively improved from the commencement of treatment, with no relapses. Whereas "Slow Improvement" included cases which took much longer to clear up and where there was perhaps a small relapse which responded to still further treatment.

#### Response to Penicillin.

2 cases (10.6%) responded "rapidly" to treatment, 9 cases (47.3%) showed "steady improvement" and 8 (42.1%) only slow improvement.

#### Relapses.

11 of those patients had had previous treatment with Penicillin, either intramuscularly and locally.

5 of this series of cases (26.3%) had a definite relapse after apparent cure, at varying periods after discharge from hospital, even although they were continuing with local treatment.

#### Reactions.

No untoward reactions were seen in this small series.

#### Focal Sepsis.

4 cases had definite foci of infection. These were

Root abscess of tooth - 2 cases.

Sinus/

Sinus	- 1 case
Prostate	- 1 case.

In 2 of these cases a mild flare up occurred after the focus had been dealt with, which may have indicated that the focus was connected with the skin condition. In 2 of these cases there was a further severe relapse after apparent cure.

#### Quinolor Ointment.

16 cases followed Penicillin therapy with Quinolor ointment, and from clinical observation this ointment has a definite place in the scheme of treatment, even although 4 out of 5 of the relapsed cases had used Quinolor.

#### X-rays.

5 of the cases had fractional doses of X-rays - 75 r units at weekly intervals, and 4 of these are still healed at the time of writing.

#### CONCLUSIONS.

There is no doubt that Penicillin has opened up a new chapter in the treatment of Sycosis Barbae, but not perhaps in the way that was hoped for, e.g. it is no use handing the patient a jar of Penicillin cream and telling him/

him to apply it and all will be well, rather has Penicillin to be used in conjunction with all the other members of the team, namely, attention to general health, manual epilation of affected hairs, Quinolor ointment and X-rays.

By the figures, the results appear disappointing, as treatment is often lengthy with a considerable percentage of cases relapsing. In time, however, these figures will improve as there will be fewer chronic cases to treat.

Penicillin is invaluable, as it will, at least temporarily, clear up the infection with no risk of severe sensitisation reactions (c.f. Sulphonamide) and if treatment is followed with Quinolor ointment, many patients will remain reasonably clear, and fewer cases will require X-ray therapy. There is, however, a type of case where adequate treatment with Penicillin and Quinolor will fail to cure and where fractional doses of X-rays are required to give a better chance of permanent cure by perhaps "changing the soil." X-rays are indispensable in the scheme of treatment used cautiously and not before adequate local treatment, especially with Quinolor ointment, has been given a fair trial.

Other important points which will lessen the tendency to relapse are:-

- (1) Shaving: The patient should be advised to discard the shaving brush and soap and change to a "brushless" shaving/

shaving cream.

- (2) Nasal discharges, blepharitis, otitis externa should be dealt with.
- (3) Local treatment, usually Quinolor should be continued for some time after apparent cure.
- (4) Any other manifestation of the Seborrhoea state should be treated.

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PART FOUR

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FURUNCULOSIS.

Furunculosis in the army was the cause of much loss of man hours and interference with training, and it can quite safely be said that every sick parade had its quota of soldiers attending with boils, and of cases requiring admission to the skin department of a Military Hospital in Tripoli, boils accounted for 12% of the total (Savage) 1944. (55)

It was thought necessary to differentiate between "acute" and "chronic" boils, as the former generally respond to simple treatment, whereas the treatment of chronic relapsing boils has always been a problem. Thus it was decided that boils of a month's duration or under should be "acute," and boils of a duration over one month "chronic."

Why boils should continue to relapse in an otherwise healthy individual is not yet clear, but certain characteristics indicate, in most cases, a local cause for the disease rather than any systemic abnormalities. All my group of cases were healthy soldiers, the general history being that the boils usually started with a single infection and thereafter appeared in succession, and did not occur simultaneously as would be expected in a blood borne infection. Furthermore, the individual furuncle invariably began in hair follicles, the lesions nearly always being limited to

a/

a region of the body and extension of the involved area tended to be from the centre of that region peripherally.

According to Price (1944), organisms cultured from different furuncles in the same patient are identical and even during the height of furunculosis, blood culture is almost always negative. These facts, therefore, with a study of the bacteriology of the skin, has led to the more popular belief that a local spread of infection is sufficient to account not only for the features of the disease but also for the characteristic chronicity.

All kinds of treatment, both internal and local have been recommended for the treatment of boils, most of these, however, being discarded after varying periods of popularity. Most recently the sulphonamide group of drugs promised good results, but although controlling temperature and any tendency to lymphangitis in acute boils, they had no effect on the relapse rate of chronic furunculosis. Barber's opinion (1944) (53) was that results were "uncertain," and that Sulphathiazal was the drug of choice. Roxburgh (1944) (54) stated that "Sulphathiazal internally is usually worth giving for a few days."

In general, the modern local treatment depends on measures to prevent the contamination of the surrounding skin. These/



These are scrupulous cleanliness of the patient's person, hands, finger-nails, clothing (changes of underwear, cleaning of coat collars etc), prevention of friction, scratching and rubbing, general and local disinfection and toughening of the skin surface, using mercurial washes, potaso permang. baths, alcohol rubs. etc.

It naturally followed, therefore, that when penicillin became available, great hope was held out that at last here was the answer. Boils in future would heal rapidly and there would be no recurrences. The literature is still very scanty on the subject. Roxburgh et al (1944) (47) treated five cases of boils with Penicillin ointment. In this small series there was one spectacular cure without further recurrence. Coleman et. al (1944) (48) treated 6 young children with I.M. Penicillin, giving between 200,000 and 480,000 units and reported a "remarkably rapid response of multiple furunculosis, the furuncles receding within 24 or 48 hours, some of them disappearing entirely within 72 hours.

Sulzberger (1944) (49) reported excellent results with systemic therapy, but added that recurrences were noted in several of the cases. Hellier and Hodgson (1945) (50) stated that parenteral Penicillin would often cut short an attack of boils, and was particularly useful in severe multiple boils of the back of the neck and axilla. They tried 1 M. Penicillin/

Penicillin in recurrent boils with apparent success, but stressed that adjuvant measures should not be neglected; these were - avoidance of friction, from rough or dirty clothing and frequent sterilisation of the skin with soap and water. Their usual dosage was about 500,000 units. Goldberg's opinion (1945) (52) was that "Furunculosis does not respond so readily, and when treated by the intra-muscular method, huge amounts of Penicillin must be given," e.g. one patient received as much as 5,000,000 units before the disease was controlled. Peterkin (1945) (51) treated 45 patients who had had boils for between 3 and 18 months with 1 M. Penicillin, the dosage varying between 500,000 and 1,000,000 units. At the end of one month, 10 patients had already had a recurrence. He also stressed the importance of thorough local treatment, saying that "the skin should be disinfected as thoroughly as possible."

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As stated previously, the cases in this series were divided into "Acute," i.e. patients whose boils had not persisted for more than one month, and "Chronic," patients who had a longer history than one month.

On admission, a history was taken, followed by a general inspection of the patient; next his urine was tested for albumen and sugar. Routine testing of the organisms sensitivity to Penicillin was highly desirable but, unfortunately, could not be done. In no case was there any general medical condition found which could have explained the patients' "lowered resistance" to infection, instead most patients used to say they were "perfectly fit except for my boils."

It was customary for the patients to remain in bed while they were having their Penicillin course.

Locally, treatment was aimed at keeping the surrounding skin as surgically clean as possible. Foments were rarely used, but sometimes in a large, painful, indurated, developing abscess, Kataplasma was used until localisation took place. The usual dressings were gauze, soaked in 5% aqueous solution of Ichthyol changed twice daily. This absorbed any discharge and tanned the surrounding skin. Other popular dressings were simple swabbing of large areas of the skin with a 1/1000 solution/

solution of Hydrarg Perchloride twice daily and quite often, e.g. in multiple boils of the forearms, baths of pot.permang. were used in a fairly strong solution until the skin was tanned a mahogany colour.

A number of cases were given a course of vaccine when the Penicillin course was completed. A stock staph. aureus vaccine was used. .1 c.c. was injected intra-dermally to begin with to see what kind of reaction, if any, was produced, thereafter the dosage was gradually increased to .2 c.c. - .3 c.c. and so on by twice weekly injections until 1 c.c. was reached. If at any time a severe local reaction was produced the dosage was maintained at this mark and injections reduced to once per week before cautiously being increased.

On discharge from hospital the patient was given a "follow up" card to report condition at the end of one month.

THERAPEUTIC RESULTS

ACUTE FURUNCULOSIS.

TABLE I.

Total Number of Cases.		17
Immediate Result	Rapid Healing	6
	Steady Healing	8
	Slow Healing	-
	Improved and Relapsed	2
	No change	-
	Worse	-
Follow up (1 month)	Cure	5
	Relapse	1
	No return	8

1. In a short series of 17 cases of "acute boils," 14 either showed "steady" or "rapid" healing with a course of L. M. Penicillin.

Two cases improved with treatment but relapsed.

Case 1. Relapsed 2 days after completing a course of 500,000 units, fresh boils appearing.

Case 2. Had already had 35 G. of Sulphathiazale followed by two courses of 500,000 units of Penicillin, after/

after both courses, relapse followed.

2. The average dosage was 500,000 units.

3. No reactions were seen.

4. Out of a total of 6 "Follow up" cards returned, 5 were cured, 1 case had relapsed, a patient who had 500,000 units followed by a course of stock vaccine.

CHRONIC FURUNCULOSIS.

As stated previously, a case is said to be "chronic" when the boils have persisted for more than one month.

TABLE II.

Total Number of Cases		54
Immediate Results	Rapid Healing	2
	Steady Healing	50
	Slow Healing	-
	Improved and Relapsed	2
	No change	-
	Worse	-
Follow up (1 month)	Cure	18
	Relapse	20
	No return	13

1. 50 cases out of 54 treated with 1 M. Penicillin showed "steady healing" from the start of the course. Two cases cleared up "rapidly."
2. 2 cases improved initially but relapsed again before complete healing took place.
3. No untoward reactions were seen.
4. Follow up at the end of only one month revealed that 20 cases (52.63%) out of a total of 38 had relapsed.

TABLE III

Type of Treatment Excl. Local (units of Penicillin).	No. of cases.
1,500,000	1
1,250,000	1
1,000,000	3
1,000,000 followed by stock staph. vacc.	8
500,000	27
500,000 followed by stock staph. vacc.	13.

Table III shows dosage of Penicillin and number of cases treated.

Analysis/



Analysis of 'Cure' and 'Relapsed' Cases.

An attempt was made to analyse the "cure" and "relapsed" cases to try and find if there was any common factor. It was thought worthwhile to do this in three ways.

- (1) Duration. Did relapse occur, e.g. more often in long-standing cases?
- (2) Area affected: Was there any particular area affected which tended to relapse more than others, and did widespread boils relapse more often than when a small area only was affected?
- (3) Treatment: Did those cases in the "cured" series have higher doses of Penicillin and where Penicillin was followed by vaccine were there fewer relapses?

(1) DURATION.

TABLE IV.

Time in Months.  Boils present.	Cure Series		Relapse Series.	
	No. of cases cons.		No. of cases cons.	
	No.	%	No.	%
Between 1 and 3/12	8	44.4	6	31.6
" 3/12 " 6/12	6	33.3	5	26.2
" 6/12 " 1 yr	3	16.7	4	21.1
Years duration	1	5.6	4	21.1

The duration of 42.2% of cases in the relapsed series was six months or over, whereas the corresponding figure in the cure series was 22.3% There were, however, 31.6% of patients who had had their boils for less than three months also relapsed.

(2) AREAS AFFECTED.

TABLE V.

	Cure	Relapse
Wrist	2	-
Neck	1	3
Arm	-	1
Forearm	4	2
Knees (2)	-	2
Buttocks & neck	1	-
Chest( )	-	2
Scattered	9	5
TOTAL	17	15

TABLE VI

Areas Affected	Cure	Relapse
One	3	4
Two	5	6
Scattered	9	5
TOTAL	17	15

In 5 cases of the 'relapsed' series the boils were scattered over the body, the corresponding figure in/

in the 'cured' series was 9. Apart from this, the one area to be most affected in the 'relapsed' series was the back of neck (3 cases), in the 'cured' series it was the forearms (4 cases).

### 3. TREATMENT.

TABLE VII

Units of Penicillin	Cure	Relapse
500,000	9	10
500,000 and vaccine	8	3
1,000,000	1	2
1,000,000 and vaccine	-	3
1,250,000	-	1
1,500,000	-	1

The commonest dosage in both series of cases was 500,000 units of Penicillin.

8 cases had 500,000 units of Penicillin followed by a course of stock vaccine and were 'cured,' 3 cases, however, had 1,000,000 units followed by stock vaccine and 'relapsed.'

### CONCLUSIONS.

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In 82.3% of 'acute' boils and 96.2% of chronic boils, the immediate response to 1 M Penicillin was superior to any other treatment, the boils clearing up "steadily" or "rapidly" from the start with no new ones appearing. Very important also was the fact that no untoward reactions were seen in this series, a very different situation from using the sulphonamides.

The disappointment, however, was the relapse rate in the 'chronic' series. 52.63% of cases relapsed within one month of leaving hospital cured, a figure much higher than Grant Peterkin's of 22.2% who was dealing with a similar number and type of case.

How to prevent relapse remains, therefore, the real problem. The present feeling that relapses of chronic boils would be prevented by more attention to detail in the local treatment is, I think, perfectly true, but was not proved by figures in this series. It is obviously easier to keep 'sterile' a small area than the whole body and yet 9 cases in the 'cured' series had boils scattered over the body whereas the corresponding figure in the relapse series was 5.

Whether higher dosage would have prevented relapse is difficult to say, certainly from the figures this is not so. All the cases having 1,000,000 units and/

and over, except one, were in the relapse group.

A course of vaccine following Penicillin seemed to help (8 cases out of 18 in the 'cured' series had vaccine).

The importance of thorough local treatment is again stressed, not so much from this series of cases as from examining patients referred for treatment. So many times cases are seen where an original boil had been fomented without protecting the surrounding skin, the result being a crop of boils at the periphery.

#### SUMMARY.

1. The results of treatment with 1 M. Penicillin of 17 cases of 'acute' boils and 54 cases of 'chronic' boils, in otherwise medically fit soldiers is given.

<sup>A</sup>  
2. ~~The~~ course of 1 M. Penicillin followed by vaccine and paying strict attention to local treatment is considered to be therapeutically superior to any other form of treatment in chronic boils.

3. 50% at least of chronic boils will, however, relapse within a month of apparent cure.

4. No definite cause for this high relapse rate was found.

5. The importance of adequate local treatment is again stressed.

FINAL CONCLUSIONS AND SUMMARY.

1. Penicillin administered intra-muscularly in a dosage of 500,000 to 1,000,000 units to severe cases of the infected seborrhoea group, sycosis barbae and Furunculosis was thereapeutically superior to any other remedy in controlling infection quickly and safely.
  2. The toxic manifestations which occurred when Penicillin was used intra-muscularly were few and unimportant. They were:-  
  
Fever (4)    Fever & urticaria (3):    Fever & urticaria and poly arthritis (1).
  3. No more effective method of administering Penicillin to cases of skin disease was found than that of Local spray, used in a strength of 1000 un/cc.
  4. Three cases of contact type of dermatitis to Penicillin were seen. When the cream was used in the treatment of out-patients the base seemed to irritate the skin of some patients.
  5. The results in the infected seborrhoeic group using local Penicillin only were often good but largely unpredicable. 31.7% of these cases either failed to improve, or relapsed before healing was complete.
- Penicillin, however, rarely proved to be clinically harmful in these cases, a most important factor, and unlike Sulphonamide locally, Mercury and Flavine, probably the three commonest preparations used in the initial local treatment of this group to-day.

6. In Sycosis barbae, Penicillin certainly proved valuable, but only as an adjuvant to treatment, which, when used with the other members of the team, viz. manual epilation of hairs, eradication of obvious focal sepsis, Quinolor ointment and X-ray therapy produced the best results. 26.37% of patients, however, had a severe relapse at varying times after apparent cure, even although they were still continuing with local treatment.

7. In chronic furunculosis, a course of 500,000 to 1,000,000 units of Penicillin cleared up quickly all existing lesions but did not prevent future relapse. The cases which followed Penicillin with a course of stock vaccine had a slightly smaller relapse rate.

In the whole series, however, over 50% of patients had a recurrence within one month of apparent cure.